



# PUMA 4100 series

Powerful, Heavy Duty Turning Center



## Various Line-up for Medium to Large Size Workpiece

PUMA 4100 series are optimized to heavy cutting of Medium to Large size workpiece by 550 mm ( 21.7 inch ) of max. turning dia. & 1m ( 40 inch ) or 2m ( 80 inch ) of max. turning length.



Max. turning dia. ( a )	Std. chuck size	Max. turning length ( b )	
		1000 mm ( 40 inch ) range	2000 mm ( 80 inch ) range
550 mm ( 21.7 inch )	12 inch	PUMA 4100A [ MA ]	PUMA 4100LA [ LMA ]
	15 inch	PUMA 4100B [ MB ]	PUMA 4100LB [ LMB ]
	21 inch	PUMA 4100C [ MC ]	PUMA 4100LC [ LMC ]

## Heavy Duty Cutting Capacity

PUMA 4100 series have heavy cutting capability by maximized structure rigidity applying box guideway on bed & saddle



### OD Turning

- Cutting speed : 210 m/min
- Feedrate : 0.55 mm/rev
- Cutting depth : 6.8 mm ( 0.27 inch )



### Face Milling

- Face mill dia. : 63 mm ( 2.5 inch )
- Cutting speed : 176 m/min
- Feedrate : 900 mm/min
- Cutting depth : 6 mm ( 0.2 inch )



### ID Turning (Roughing)

- Cutting speed : 280 m/min
- Feedrate : 0.1 mm/rev
- Cutting depth : 3 mm ( 0.1 inch )
- Tool length : 4.0D



### U-drilling ( 3 axis )

- Tool dia. : 25 mm ( 1.0 inch )
- Spindle speed : 2500 r/min
- Feedrate : 0.3 mm/rev



### U-drilling ( 2 axis )

- Tool dia. : 80 mm ( 3.1 inch )
- Spindle speed : 750 r/min
- Feedrate : 0.1 mm/rev

\* This test result come from under condition

1) Material : Steel ( SM45C )

2) Test Machine : PUMA 4100B

- Main spindle motor : 26 / 22 kW ( 34.9 / 29.5 Hp )

- Rotary tool motor : 11 / 5.5 kW ( 14.8 / 7.4 Hp )



# Machine Specifications

	Features		Unit	PUMA 4100A [LA]	PUMA 4100B [LB]	PUMA 4100C [LC]	PUMA 4100MA [LMA]	PUMA 4100MB [LMB]	PUMA 4100MC [LMC]
Capacity	Swing over bed		mm (inch)	790 (31.1)					
	Swing over saddle		mm (inch)	590 (23.2)					
	Recom. Turning diameter		mm (inch)	315 (12.4)	380 (15.0)	380 (15.0)	315 (12.4)	380 (15.0)	380 (15.0)
	Max. Turning diameter		mm (inch)	550 (21.7)			560 (22.0)		
	Max. Turning length		mm (inch)	1079 [2129] (42.48 [83.82])	1043 [2093] (41.1 [82.4])	1024 [2074] (40.31 [81.7])	1014 [2064] (39.9 [81.3])	978 [2028] (38.5 [79.8])	959 [2009] (37.8 [79.1])
	Chuck size		inch	12	15	21	12	15	21
	Bar working diameter		mm (inch)	102 (4.0)	116.5 (4.6)	165.5 (6.5)	102 (4.0)	116.5 (4.6)	165.5 (6.5)
Travels	Travel distance	X-axis	mm (inch)	352 (13.9)					
		Z-axis	mm (inch)	1105 [2155] (43.5 [84.8])					
Feedrates	Rapid Traverse Rate	X-axis	m/min (ipm)	16 (629.9)					
		Z-axis	m/min (ipm)	20 [18] (787.4 [708.7])					
Main spindle	Max. Spindle speed		r/min	3000	2000	1500	3000	2000	1500
	Spindle nose		ASA	A2-11	A2-11	A1-15	A2-11	A2-11	A1-15
	Spindle bearing diameter (Front)		mm (inch)	160 (6.3)	180 (7.1)	240 (9.4)	160 (6.3)	180 (7.1)	240 (9.4)
	Spindle through hole		mm (inch)	115 (4.5)	132 (5.2)	181 (7.1)	-	-	-
	Min. spindle Indexing angle (C-axis)		deg	-	-	-	0.001	-	0.001
Turret	No. of tool stations		ea	12 / 10*	10 / 12*	10 / 12*	12		
	OD tool size		mm (inch)	32 x 32			25 x 25		
	Max. boring bar size		mm (inch)	ø60			ø60		
	Turret Indexing time (1 station swivel)		s	0.25			0.25		
	Max. Rotary tool speed		r/min	-			4000		
Tail Stock	Quill diameter		mm (inch)	120					
	Quill bore taper		MT	#6					
	Quill travel		mm (inch)	120					
Motors	Main spindle motor power (30min./ cont.)		kW (Hp)	35 / 26 / 22 (46.9 / 34.9 / 29.5) (S3 25% / S3 60% / cont.)	35 / 26 / 22 (46.9 / 34.9 / 29.5) (S3 25% / S3 60% / cont.)	37 / 30 (49.6 / 40.2)	30 / 22 (40.2 / 29.5)	30 / 22 (40.2 / 29.5)	37 / 30 (49.6 / 40.2)
	Rotary tool motor power (1.5 min / cont.)		kW (Hp)	-	-		23 / 7.5 (30.8 / 10.1)		
	Coolant pump motor power		kW (Hp)	0.4 / 0.9* / 1.5* / 3.7* / 4.0* (0.5 / 1.2* / 2.0* / 5.0* / 5.4*)					
Power source	Electric power supply (rated capacity)		kVA	38.40 [39.32]	42.25 [43.17]	51.05 [51.97]	43.18 [45.06]	43.18 [45.06]	51.98 [53.86]
Machine Dimensions	Length		mm (inch)	4654 [5774] (181.1 [227.3])					
	Width		mm (inch)	2055 [2275] (80.9 [89.6])					
	Height		mm (inch)	2194 [2222] (86.4 [87.5])					
	Weight		kg (lbs)	9450 [10900] (20834 [24030])	9950 [11400] (21935 [25133])	10450 [11900] (23038 [26235])	9600 [11100] (21164 [24471])	10100 [11600] (22267 [25574])	10600 [12100] (23369 [26676])
NC system			DOOSAN-Fanuc i Series / Fanuc 32i						

\* options

## Standard Feature

- Coolant supply equipment
- Foot switch
- Full enclosure chip and coolant shield
- Hand tool kit, including small hand tool for operations
- Hydraulic chuck & actuating cylinder
- Hydraulic power unit
- Leveling jack screw & plates
- Live center
- Lubrication equipment
- Soft jaws
- Standard tooling kit (tool holders& boring sleeves)
- Work light

- The specifications and information above-mentioned may be changed without prior notice.
- For more details, please contact Doosan

## Optional Feature

- Additional tool holders & sleeves
- Air blower for chuck jaw cleaning
- Air gun
- Automatic door with safety device
- Automatic power off
- Built-in dead center
- Chip bucket
- Chip conveyor
- Chuck clamp confirmation
- Chuck coolant
- Controller : DOOSAN - FANUC i
- Coolant chiller
- Coolant gun
- Coolant pump motor power up
- Dual pressure chucking
- Hardended & ground hard jaws
- Hydraulic steady rest
- In-machine workpiece measuring system
- Linear scale
- Manual steady rest
- Mist collector
- Oil skimmer
- Proximity switches for chuck clamp detection
- Proximity switches for quill position detection
- Rotary type window wiper
- Signal tower (yellow, red, green)
- Special chucks
- Steady rest ( manual / hydraulic / programmable )
- Tool monitoring system
- Tool setter ( manual / auto )
- Twin chuck



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